



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : A61M 25/00, 25/10	A2	(11) International Publication Number: WO 99/44666
		(43) International Publication Date: 10 September 1999 (10.09.99)

(21) International Application Number: PCT/US99/03438

(22) International Filing Date: 18 February 1999 (18.02.99)

## (30) Priority Data:

09/034,421	4 March 1998 (04.03.98)	US
09/233,553	20 January 1999 (20.01.99)	US

(71) Applicant: SCIMED LIFE SYSTEMS, INC. [US/US]; One SciMed Place, Maple Grove, MN 55311 (US).

(72) Inventors: EIDENSCHINK, Tracee, E., J.; 2232 Pinto Drive, Wayzata, MN 55391 (US). MICKLEY, Timothy, J.; 21870 Xenon Street, Elk River, MN 55330 (US). LARSON, Christopher, R.; 435 Desnoyer Avenue, St. Paul, MN 55104 (US). MERTENS, Steven, P.; 18220 46th Avenue North, Plymouth, MN 55446 (US). EUTENEUER, Charles, L.; 1951 Lander Avenue N.E., St. Michael, MN 55376 (US).

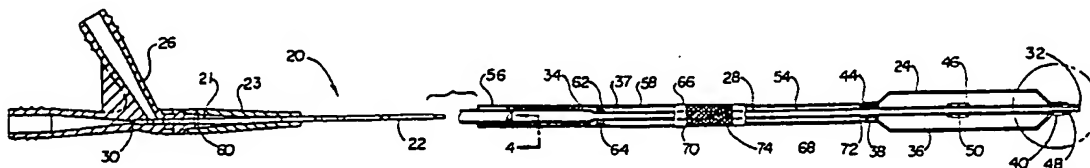
(74) Agents: CROMPTON, David, M. et al.; Crompton, Seager &amp; Tufte, LLC, Suite 895, 331 Second Avenue South, Minneapolis, MN 55401-2246 (US).

(81) Designated States: CA, JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

## Published

*Without international search report and to be republished upon receipt of that report.*

(54) Title: CATHETER TIP DESIGNS AND METHODS FOR IMPROVED STENT CROSSING



## (57) Abstract

A balloon catheter having a first balloon member and a second distal expandable member. The increased distal profile of the catheter with inflation of the second distal expandable member can deflect the distal-most end away from stent walls and edges. Another catheter has a distal region including longitudinal slits and a pre-stressed body configured to expand upon exposure to warm body fluids. Another catheter has a distal region including a first, inner tube disposed about a second, innermost tube. The inner and innermost tubes are secured at the distal-most end. The distal region includes longitudinal slits through the inner tube, thereby defining flaps between the slits. The innermost tube can be retracted relative to the inner tube disposed about the innermost tube, thereby causing the longitudinal flaps to expand outward, thereby increasing the maximum radial extent of the distal region. In yet another embodiment, a balloon catheter having a first guide wire tube is provided. A second guide wire tube is also provided, adapted to be received within the larger, first guide wire tube.